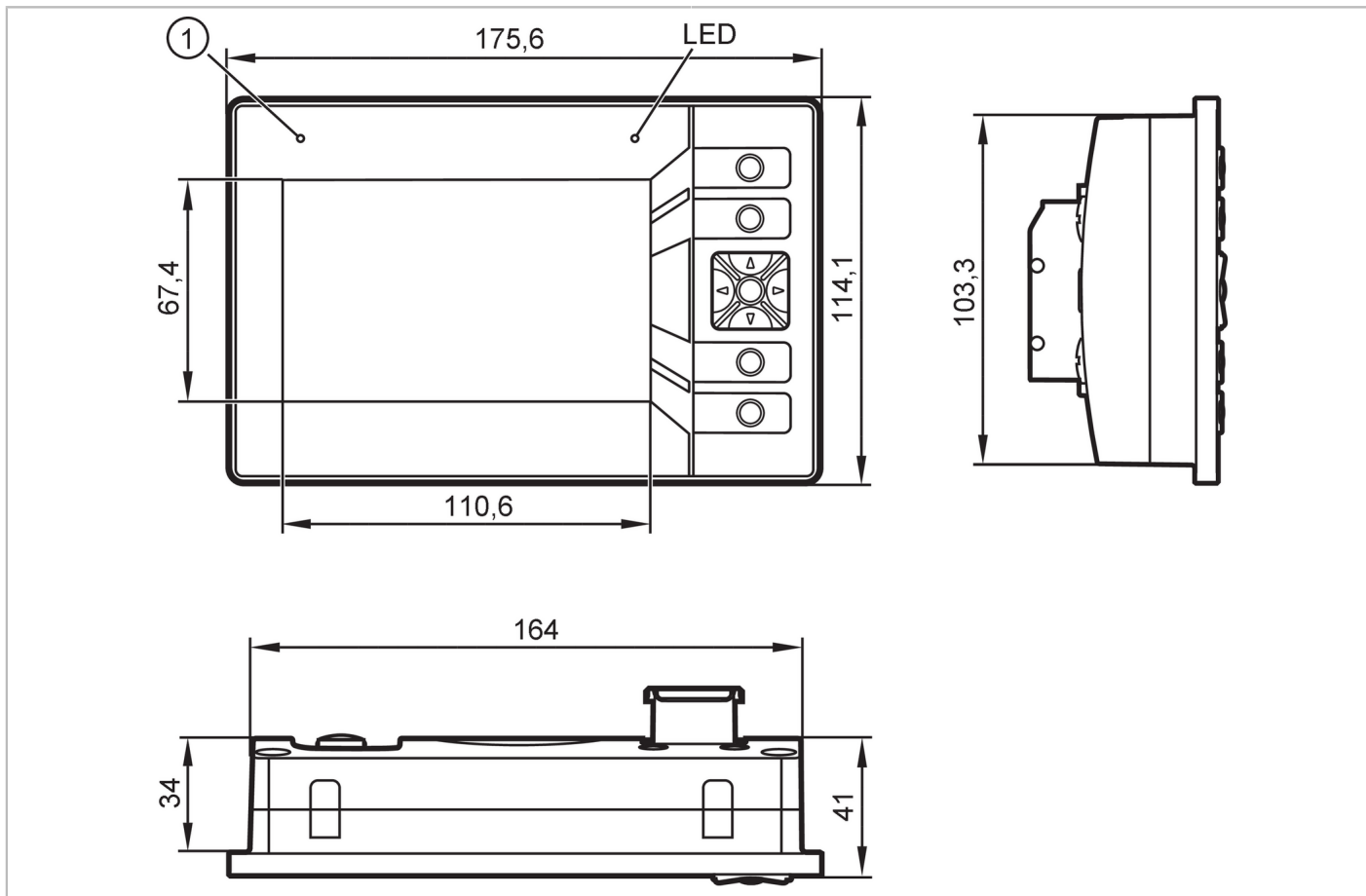


# CR1152



## Programmable Human Machine Interface

ecomatDisplay/5"HB/Touch



### Product characteristics

|                         |                                   |                                |
|-------------------------|-----------------------------------|--------------------------------|
| Communication interface | Ethernet; CAN; USB                |                                |
| Operating elements      | 4                                 | Operating elements             |
|                         | 1                                 | Navigation key with pushbutton |
| Display type            | color display with touch function |                                |

### Electrical data

|                     |      |  |
|---------------------|------|--|
| Operating voltage   | [V]  | 8...32 DC  |
| Nominal voltage DC  | [V]  | 12 / 24  |
| Current consumption | [mA] | < 833; (24 V DC; with switched outputs: < 5833 mA) |
| Power consumption   | [W]  | 20   |

### Inputs / outputs

|                              |   |
|------------------------------|---|
| Number of inputs and outputs | Number of digital inputs: 2; Number of digital outputs: 2 |
|------------------------------|---|

### Inputs

|                          |             |
|--------------------------|-------------|
| Number of digital inputs | 2           |
| Number of video inputs   | 2; (analog) |
| Video input              | PAL, NTSC   |

### Outputs

|                              |           |
|------------------------------|-----------|
| Number of digital outputs    | 2         |
| Max. current load per output | [mA] 2500 |



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|                                   |   |
|-----------------------------------|---|
| Audio output                      | Stereo Line-Out   |
| <b>Software / programming</b>     |   |
| Parameter setting options         | CODESYS 3.5   |
| PLC function to IEC 61131-3       | yes   |
| Operating system                  | Embedded Linux 4.14   |
| <b>Interfaces</b>                 |   |
| Communication interface           | Ethernet; CAN; USB  |
| Number of CAN interfaces          | 4   |
| Number of Ethernet interfaces     | 1   |
| Number of USB interfaces          | 1   |
| Number of video interfaces (CVBS) | 2   |
| <b>CAN</b>                        |   |
| Transmission rate                 | 20 kBit/s... 1 MBit/s   |
| Protocol                          | CANopen; SAE J1939; free protocol   |
| Profile                           | CiA DS 301 Version 4; CiA DS 401 Version 1.4  |
| Interface                         | CAN Interface 2.0 A/B ISO 11898   |
| <b>Ethernet</b>                   |   |
| Transmission standard             | 10Base-T; 100Base-TX  |
| Transmission rate                 | 100 MBit/s  |
| Protocol                          | TCP/IP; UDP; Modbus TCP; OPC UA; EtherNet/IP  |
| Note on interfaces                | OPC UA Micro Embedded Device Server   |
| <b>USB</b>                        |   |
| Transmission rate                 | < 480 MBit/s  |
| Version                           | 2.0   |
| <b>Operating conditions</b>       |   |
| Ambient temperature [°C]          | -30...65  |
| Note on ambient temperature       | 2000 m: -30...65 °C<br>3000 m: -30...60 °C  |
| Storage temperature [°C]          | -30...85  |
| Max. relative air humidity [%]    | 90; (non condensing)  |
| Max. height above sea level [m]   | 3000  |
| Protection                        | IP 65; IP 67; (for inserted connectors with individually sealed cores and inserted M12 connectors or sealing caps: IP 67) |
| Degree of soiling                 | 2   |



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| Tests / approvals               |   |  |
|---------------------------------|---|--|
| EMC                             | UN/ECE-R10 Noise emission and noise interference: | 100 V/m  |
|                                 | DIN EN 61000-6-2 ESD                              |  |
|                                 | DIN EN 61000-6-4 Burst                            |  |
|                                 | ISO 7637-2 pulse 1                                | severity level 4 / function state C (24 V)                                   |
|                                 | ISO 7637-2 pulse 2a                               | severity level 4 / function state A (24 V)                                   |
|                                 | ISO 7637-2 pulse 2b                               | severity level 4 / function state C (24 V)                                   |
|                                 | ISO 7637-2 pulse 3a                               | severity level 4 / function state A (24 V)                                   |
|                                 | ISO 7637-2 pulse 3b                               | severity level 4 / function state A (24 V)                                   |
|                                 | ISO 7637-2 pulse 4                                | severity level 4 / function state A (24 V)                                   |
|                                 | ISO 7637-2 pulse 5                                | severity level 3 / function state C (24 V)                                   |
|                                 | ISO 7637-2 pulse 4                                | severity level 4 / function state A (12 V)                                   |
| Continuous shock resistance     | ISO 16750-3                                       | 30 g 6 ms / 24000 shocks   |
| Fast temperature changes        | EN 60068-2-30 damp heat: cyclical                 | 55 °C upper temperature limit / 6 cycles                                     |
|                                 | EN 60068-2-78 damp heat: constant                 | 40 °C 93 % rH / test period 21 days  |
| Vibration resistance            | ISO 16750-3 Test VII                              | random, mounting place car body  |
|                                 | EN 60068-2-6 Sinus                                | 10...500 Hz / 10 cycles/axis, sine   |
| Salt spray test                 | EN 60068-2-52 Salt spray                          | severity level 3 / motor vehicle   |
| MTTF                            | [years]   | 40   |
| Mechanical data                 |   |  |
| Weight                          | [g]   | 1073.7   |
| Housing                         |   | rectangular  |
| Type of mounting                |   | panel/surf.  |
| Dimensions                      | [mm]  | 114.1 x 175.6 x 41   |
| Material                        |   | diecast aluminium powder-coated; Display: glass anti-reflective and hardened |
| Information on service life     | Pushbuttons:                                      | 1000000 Betätigungen   |
|                                 | Navigation key with pushbutton:                   | 1000000 Betätigungen   |
|                                 | Display LED lifetime:                             | > 50000 h  |
| Displays / operating elements   |   |  |
| Display                         | Status LED  | 1 LED, RGB   |
|                                 | Operating elements                                | LED, RGB   |
| Operating elements              | 4   | Operating elements   |
|                                 | 1   | Navigation key with pushbutton   |
| Display resolution              |   | 800 x 480  |
| Display type                    |   | color display with touch function  |
| Display size                    |   | 5"   |
| Aspect ratio                    |   | 16:10  |
| Display background illumination |   | LED  |
| Color depth                     |   | 24 Bit   |
| Brightness                      | [cd/m <sup>2</sup> ]                              | < 1000; (adjustable: 0...100 %; In steps of: 1 %)                            |
| Contrast ratio                  |   | 1000:1   |
| Touchscreen version             |   | PCAP   |
| Hardware                        |   |  |
| Processor                       |   | ARM Dual Core 64 Bit 800 MHz   |
| Working memory                  |   | 1 GByte RAM  |

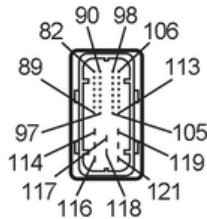


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|                    |                            |
|--------------------|----------------------------|
| Mass storage       | 4 GByte Flash              |
| <b>Data memory</b> |                            |
| Real-time clock    | yes; UTC, battery buffered |
| <b>Remarks</b>     |                            |
| Pack quantity      | 1 pcs.                     |

### Electrical connection - AMP connector



|     |               |
|-----|---------------|
| 82  | VIDEO3_GND    |
| 83  | IFM0-         |
| 84  | CAN0_L        |
| 85  | CAN1_L        |
| 86  | CAN2_L        |
| 87  | CAN3_L        |
| 88  | IFM1-         |
| 89  | SERVICE1      |
| 90  | VIDEO3_SIGNAL |
| 91  | IFM0+         |
| 92  | CAN0_H        |
| 93  | CAN1_H        |
| 94  | CAN2_H        |
| 95  | CAN3_H        |
| 96  | IFM1+         |
| 97  | SERVICE0      |
| 98  | VIDEO0_GND    |
| 99  | VIDEO1_GND    |
| 100 | VIDEO2_GND    |
| 101 | AUDIO_IN_R    |
| 102 | AUDIO_GND     |
| 103 | HEAD_OUT_R    |
| 104 | AUDIO_OUT_R   |
| 105 | AUDIO_OUT_L   |
| 106 | VIDEO0_SIGNAL |
| 107 | VIDEO1_SIGNAL |
| 108 | VIDEO2_SIGNAL |
| 109 | AUDIO_IN_L    |
| 110 | n.c.          |
| 111 | HEAD_OUT_L    |
| 112 | AUDIO_OUT_R+  |
| 113 | AUDIO_OUT_L+  |
| 114 | VBB0          |
| 115 | IN0           |
| 116 | IN1           |
| 117 | OUT0          |
| 118 | OUT1          |
| 119 | VBB15         |
| 120 | GND           |
| 121 | VBB30         |



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### Electrical connection - ETH0

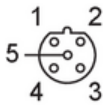
Connector: M12; coding: D



|   |                                  |
|---|----------------------------------|
| 1 | TxD+                             |
| 2 | RxD+                             |
| 3 | TxD-                             |
| 4 | RxD- Schirm am Gehäuse aufgelegt |

### Electrical connection - USB0

Connector: M12; coding: B



|   |                                 |
|---|---------------------------------|
| 1 | + 5 V DC                        |
| 2 | - Data                          |
| 3 | + Data                          |
| 4 | ID                              |
| 5 | GND Schirm am Gehäuse aufgelegt |